

Roof Gardens



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General Description

Roof gardens, or green-roofs, are vegetated roof systems that retain and filter stormwater and provide aesthetic and energy conservation benefits. A green roof is built on top of a new or existing roof and consists of a special root repelling membrane, a drainage system, a lightweight growing medium and plants.

Inspection/Maintenance Considerations

Rooftop gardens need to be watered and weeded, similar to any other garden. The frequency of watering will depend on types of plants used and climate conditions. Irrigation systems need to be checked for proper operations, including water leaks and proper drainage. Water not absorbed into soil and plants must be effectively transported and drained from the rooftop. Drainage systems need to be inspected, including gutters, downspouts, drains and screens that prevent erosion to growing media and clogging of drainage pipes. Roof systems need to be inspected for water damage.

Maintenance Concerns, Objectives, and Goals

- Clogged Soil
- Vegetation Management
- Energy Conservation
- Aesthetics

Targeted Constituents

✓ Sediment	■
✓ Nutrients	■
✓ Trash	●
✓ Metals	■
✓ Bacteria	■
✓ Oil and Grease	■
✓ Organics	■
✓ Oxygen Demanding	■

Legend (Removal Effectiveness)

- Low ■ High
▲ Medium

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Inspection Activities	Suggested Frequency
<ul style="list-style-type: none">■ Inspect to ensure irrigation and drainage systems are working properly.	Immediately following construction
<ul style="list-style-type: none">■ Inspect for evidence of erosion from wind or water.■ Inspect automated irrigation systems for leaks or malfunctions.■ Inspect drainage inlets to roof drainage system for obstructions.■ Inspect vegetation for health and check if plant growth is interfering with planter operation.■ Inspect membrane and roof structure for proper operations.	Monthly, or as needed
Maintenance Activities	Suggested Frequency
<ul style="list-style-type: none">■ Replace plants once per month as needed during establishment period.	Post-construction
<ul style="list-style-type: none">■ Supplement soil substrate/growth medium and control any existing erosion.■ Remove obstructions from drainage inlet. Repair or replace drain inlet pipe.■ Remove all fallen leaves and debris from surrounding roof area.■ Remove dead vegetation and weeds. Do not use pesticides or herbicides. Replace plants to maintain 90% plant cover.■ Repair or replace parts of irrigation systems. Test automated systems to ensure proper operation.	Monthly, or as needed

References

Stormwater Management Manual, Chapter 6, O & M Requirements, City of Portland, 2002.